



# PG&E, SCE, SDG&E, and Liberty Utilities' Applications for Programs Under AB 1082 & 1083

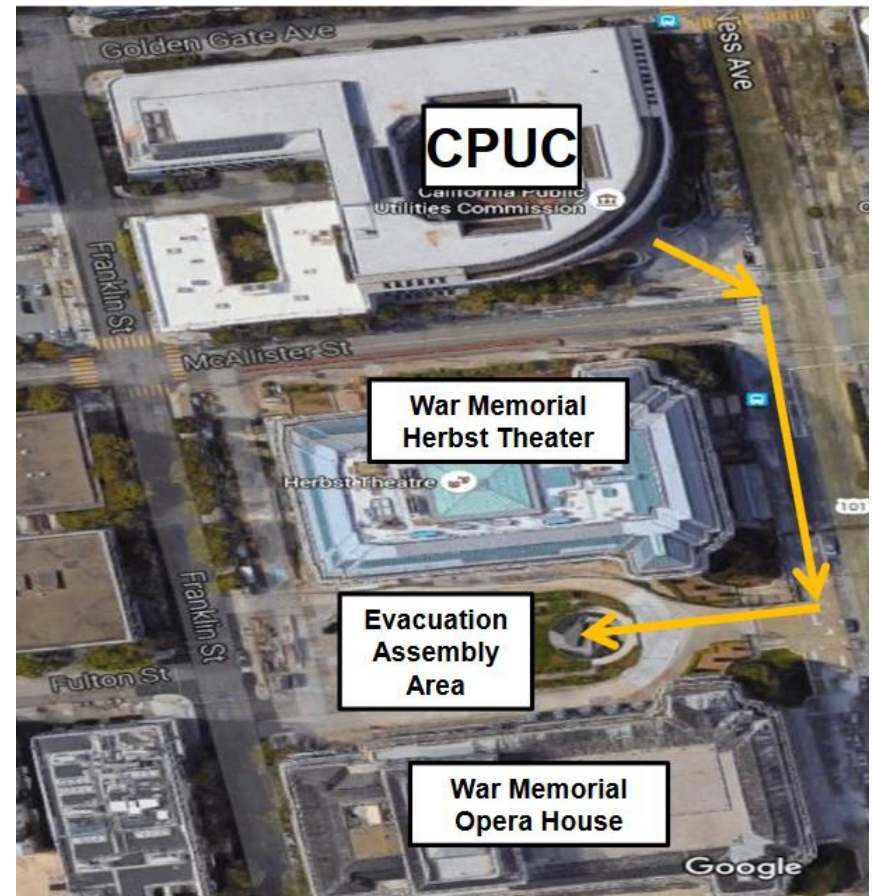


**December 6, 2018**



# Safety & Misc.

- In case of an Emergency
  - Staff will call 911
  - To evacuate, proceed out of 1 of 4 exits to Civic Center Plaza
    - Exit toward Van Ness / McAllister
    - Walk past City Hall
- Bathrooms & fountain across the Lobby





# Morning Agenda

Topic	Time
<b>Ground Rules and Workshop Process</b> Michael Truax & Carrie Sisto, TE Analysts, Energy Division	9:00am-9:05am
<b>Welcome and Introduction</b> Commissioner Carla Peterman, CPUC	9:05am-9:15am
<b>Utility Proposed Program Overviews</b> <ul style="list-style-type: none"><li>Liberty Utilities: John Friedrich</li><li>PG&amp;E: Gracie Brown</li><li>SDG&amp;E: Randy Schimka and Hannon Rasool</li><li>SCE: Eric Seilo</li></ul>	9:15am-10:35am
<b>Break</b>	10:35am-10:45am
<b>Schools' Perspective: EV Charging in Schools</b> <ul style="list-style-type: none"><li>Representative school stakeholders</li></ul>	10:45am-11:00am
<b>State Parks' Perspective: EV Charging in State Parks</b> <ul style="list-style-type: none"><li>California State Parks representative</li></ul>	11:00am-11:15pm
<b>Public Comments and Questions</b> <ul style="list-style-type: none"><li>Focus on questions for Schools and Parks stakeholders</li></ul>	11:15pm-12:00pm



# Afternoon Agenda

Topic	Time
<b>Lunch</b>	12:00pm-1:00pm
<b>Public Comments and Questions</b> <ul style="list-style-type: none"><li>• Focus on Rates and Billing</li></ul>	1:00pm-3:00pm
<b>Wrap Up and Next Steps</b>	3:00pm-3:15pm



# Workshop Objectives

- Stakeholders can more fully develop the issues they will address in written testimony
  - Address “Discussion Questions”
  - Raise and address any other significant issues
  - Receive clarification from IOUs on proposal details
- NOT intended to review every issue that stakeholders will describe in testimony



# Ground Rules

- Identify yourself and your organization
- Do not repeat what another person has already said
- Stay on topic: proposed standard review projects at level of detail in proposals
- Webinar participants can type questions/comments to 'Chat Me!' and they will be read aloud



# History of AB 1082/1083

- Background of Legislation
  - AB 32 required CARB to adopt rules and regulations to reduce GHG emission levels to 1990 levels by 2020.
    - Transportation related emissions are responsible for a growing proportion of the state's GHG emissions.
  - E.O. B-18-48 sets a state target of 5 million ZEVs by 2030 and 250,000 public EV charging stations including 10,000 DCFC, an increase from earlier state targets.





# History of AB 1082/1083

- Oct. 10, 2017
  - Approved by Governor Brown and Chaptered by Secretary of State, creating Public Utilities Code §740.13 (AB 1082) and §740.14 (AB 1083)
- Seeks to address barriers to ZEV adoption to provide greater access to charging infrastructure to promote greater adoption of ZEVs
  - Range Anxiety
  - Charger Costs/Financing
  - Access to Chargers
    - Disadvantaged Communities
    - Low- and Moderate-Income Communities





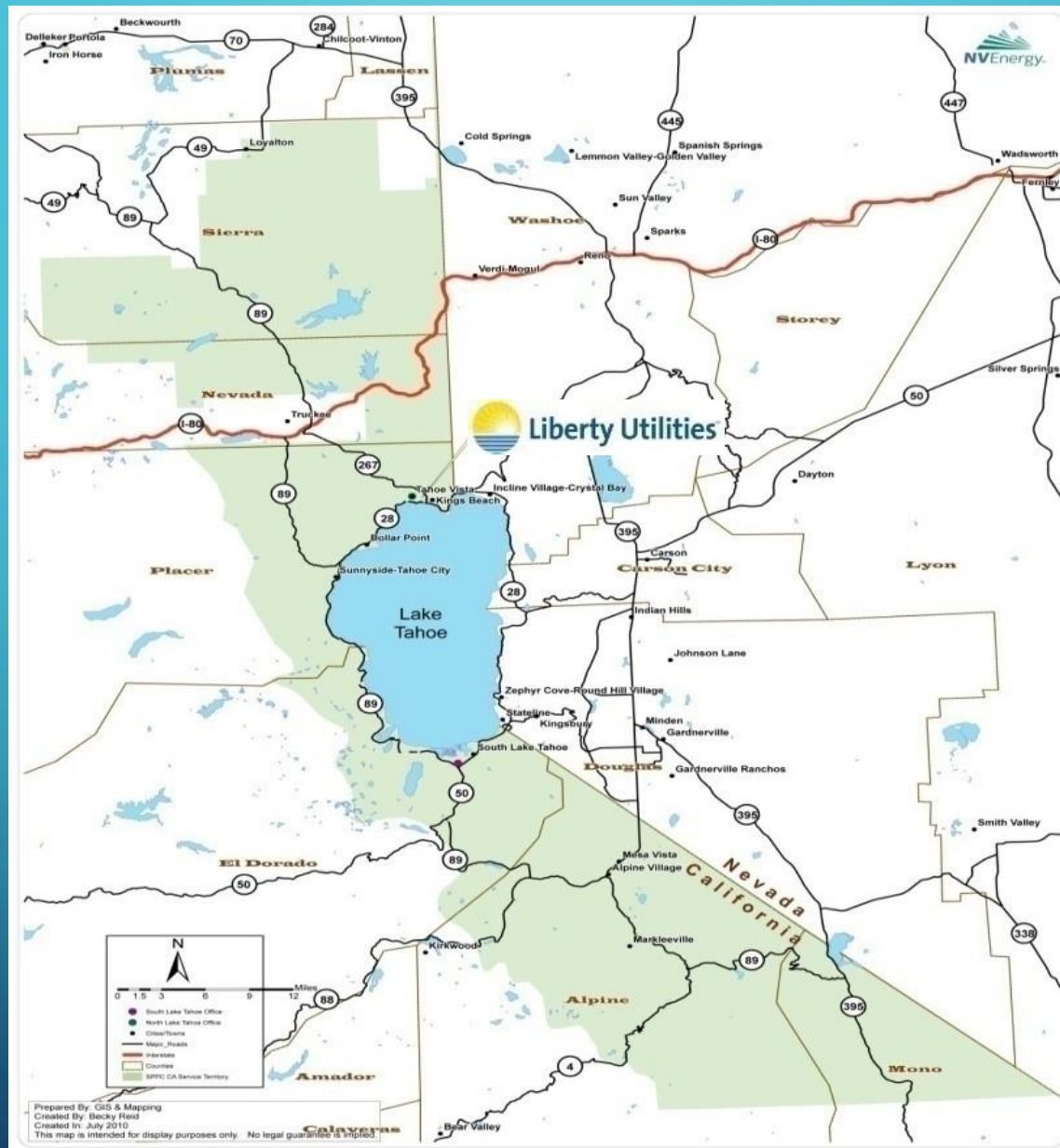
# Scoping Memo Issues

- Do the proposed programs meet the AB 1082/1083, Senate Bill (SB) 350, and requirements for Transportation Electrification from the September 14, 2016 Assigned Commissioner Ruling? Should the proposed programs be modified in any way to comply with these requirements?
- Do the AB 1082/1083 programs consider rate design issues?
- Do the AB 1082/1083 programs leverage funding by other sources?
- Do the AB 1082/1083 programs address the safety concerns set forth in Public Utilities Code § 740.8(a) and § 740.12(b)?
- What data gathering, reporting, and evaluation requirements should be imposed?
- Do the AB 1082/1083 programs adequately address low-income communities and moderate-income communities?
- Is proposed utility ownership of the charging infrastructure necessary to carry out the objectives of AB 1083/1083?
- Do the proposed programs utilize similar customer payment standards for customers to utilize across service territories?



AB 1082/ AB 1083  
E-MOBILITY PILOT PROPOSALS FOR SCHOOLS AND STATE PARKS

CPUC PUBLIC WORKSHOP  
DECEMBER 6, 2018





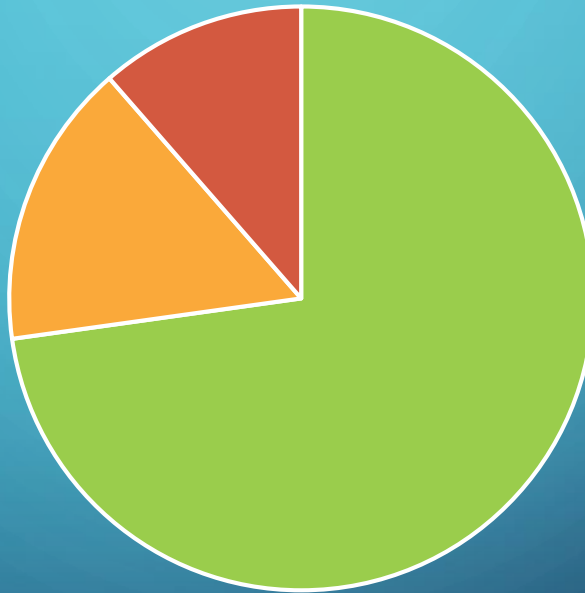


## ALLOCATION OF AB1082/AB 1083 PILOT PROGRAM EXPENDITURES

TOTAL: \$4,686,947

SCHOOLS: \$3,946,248

PARKS: \$740,699



■ Schools

■ State Parks

■ LTUSD Bus Barn

## AB 1082

PORTS	56 (54 LEV. 2, 2 DCFC)
EVSE	\$482,000
MAKE-READY	\$2,353,607
PERMITTING	\$352,000
PROJECT MGMT.	\$170,000
PILOT OUTREACH	\$71,577
CONTINGENCY	\$503,641
TOTAL	\$3,932,825

## AB 1083

PORTS	10 (ALL LEVEL 2)
EVSE	\$57,000
MAKE-READY	\$422,086
PERMITTING	\$135,000
PROJECT MGMT.	\$30,000
PILOT OUTREACH	\$13,423
CONTINGENCY	\$96,613
TOTAL	\$754,122



# LIBERTY CALPECO'S AB1083 PROPOSED PILOT DESIGN



## VISITOR CHARGING AT CALIFORNIA STATE PARKS

### *Vision*

Electrify scenic routes around Lake Tahoe, enabling EV access to California State Parks by connecting travel routes to and from the Lake Tahoe Basin otherwise inaccessible by EV

### *Proposed pilot details*

**Number of Sites:** 3 locations

**Number of Ports:** 10

**Equipment:** Level 2 Chargers

**Vehicle type:** Personal, Staff, Fleet Vehicles

**EVSE ownership model:** Liberty CalPeco ownership



## FLEET AND EMPLOYEE VEHICLE CHARGING

### *Vision*

Facilitate State Park adoption of electric fleet vehicles to meet the Governor's mandates

### *Proposed pilot details*

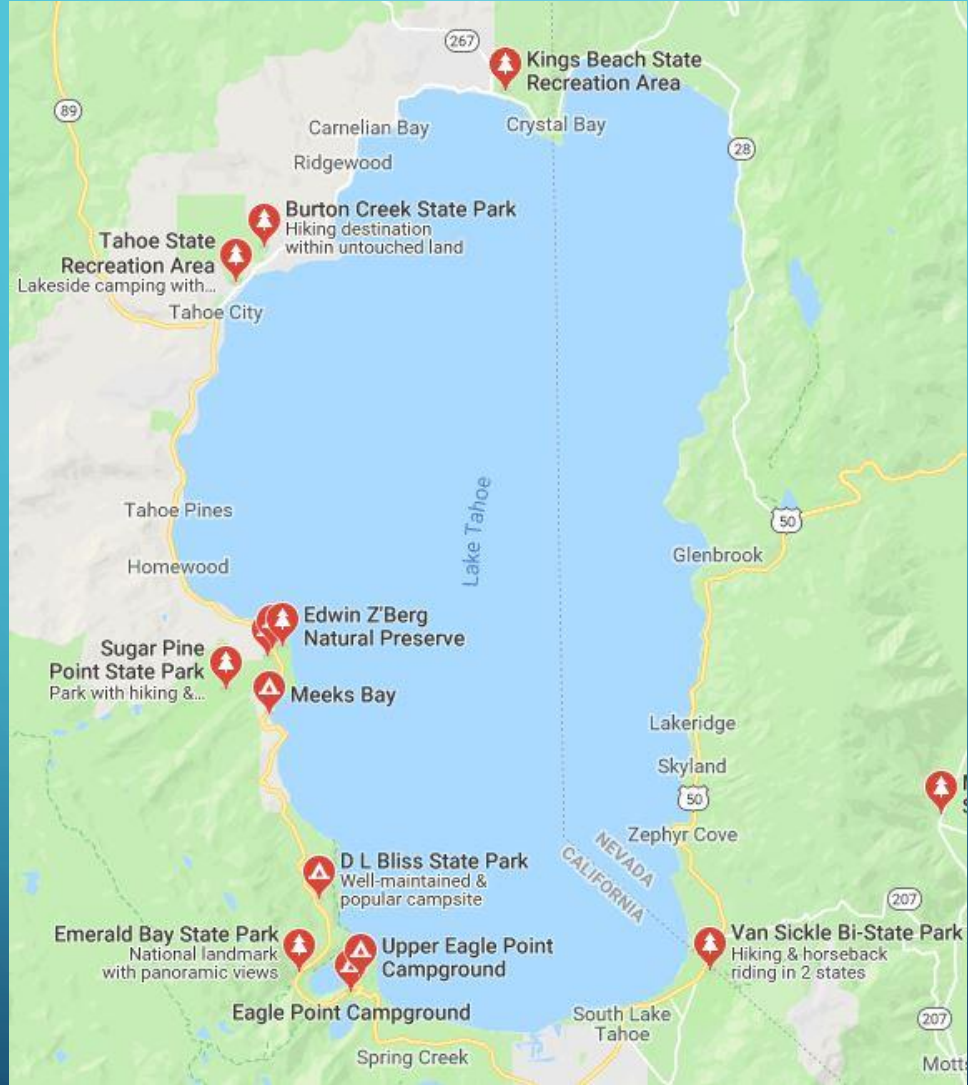
**Number of Sites:** 3 locations

**Equipment:** Level 2 Chargers

**Vehicle type:** Fleet, Employee and Public vehicles

**EVSE ownership model:** Liberty CalPeco ownership











# LIBERTY CALPECO'S AB1082 PROPOSED PILOT

## *Vision*

Meet the vehicle and bus charging needs of K-12 school districts throughout service territory, as well as Lake Tahoe Community College (LTCC).

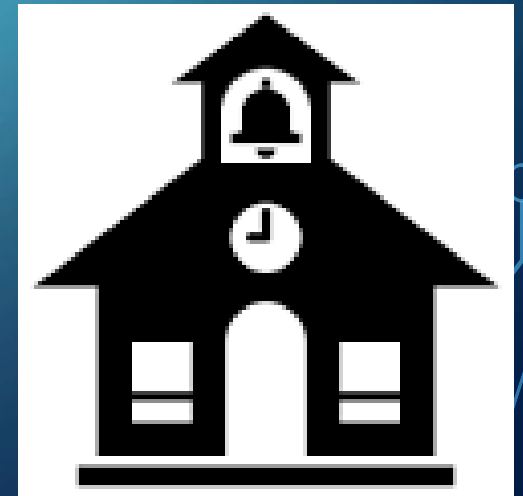
**Number of Sites:** (1) Community College, (15) elementary and high schools (estimated), (1) bus barn for charging 16 electric buses

**Number of Ports:** 56

**Equipment:** One dual Pedestal Level 2 Charger for the elementary and high schools; LTCC has Level 2 Chargers and (2) DC Fast Chargers

**Vehicle type:** Personal vehicles for students and parents, school buses, and fleet vehicles

**EVSE ownership model:** Liberty CalPeco  
Ownership of EVSE













100%  
WIND  
POWERED

revolt  
EMBRACE ELECTRIC VEHICLES

RED LIGHTS FLASH

100% Electric

"This is undeniably the bus of the future, here today."

Schmittty & Sons

DAKOTA  
ELECTRIC  
ASSOCIATION  
Your Trademark. We're Proud.

GREAT  
RIVER  
ENERGY

LION





LAKE TAHOE  
COMMUNITY COLLEGE



# PILOT OUTREACH PROGRAM

Liberty Calpeco will provide information on the new EV charging equipment—as well as EV facts, utility rates, incentives available, and program information—through its bill inserts, monthly newsletters, website, social media platforms, public presentations, **school curriculum and flyers**, and at community events. The outreach plan includes the following proposed elements:

- Two 30-second videos to be used on website as well as put into Liberty CalPeco's television commercial
- Paid media placement for television, radio, print, and online to promote program.
- Coordination with pilot program partners to advertise availability of charging stations. Available platforms include regular school district email newsletters and websites, in addition to the Tahoe Regional Planning Agency's EV Readiness Plan website: <http://tahoealternativefuels.com/>

Liberty CalPeco intends “to deploy 56 Level 2 charging ports and two DC Fast Chargers (“DCFC”) located at 17 school facilities.”<sup>2</sup> Most importantly, the utility has already identified 15 K-12 sites, one community college, and a bus barn. Site-host enrollment can be one of the most challenging aspects of program implementation. Having willing site-hosts lined up in advance could expedite the installation of actual infrastructure.

Liberty CalPeco’s application is also unique amongst the AB 1082 proposals because it aims to provide the necessary infrastructure to charge electric school buses. Electrifying school buses address a particularly vulnerable population—children. NRDC and the Coalition for Clean Air brought attention to this risk in 2001, in the report, *No Breathing in the Aisles*, which documented exposures to children passengers that pose “23 to 46 times the cancer risk level considered significant under federal law.”<sup>3</sup> The Lake Tahoe Unified School District’s goal of replacing half its diesel fleet with electric school buses in the next three years is worthy of significant support. We also encourage Liberty CalPeco to work with the school district to leverage the energy storage inherent in those buses by managing charging in a manner that maximizes fuel cost savings, facilitates the integration of renewable energy, and generally



July 18, 2018

Lake Tahoe Community College  
One College Drive  
South Lake Tahoe, CA 96150

To: California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102

Subject: AB1082/EV Charging for Schools  
Letter of Support for Liberty Utilities

California Public Utilities Commission,

On behalf of Lake Tahoe Community College District (LTCCD), I am writing to express support for Liberty Utilities' proposed electric vehicle charging pilot program for the installation of vehicle charging stations at school facilities within its service territory.

LTCCD understands the importance of reducing dependence on petroleum, meeting California's air quality standards and reducing emission of greenhouse gases. With this in mind, we are currently developing a Mobility Hub on our campus. This project will create a centralized transportation hub for use by LTCCD students, staff, community members and visitors to the South Lake Tahoe basin. New facilities will include a bus stop shelter with electric bus charging and an alternative transportation center that provides covered bicycle parking, bicycle and motorized scooter rentals, and a hub for other alternative transportation partners.

A key component to our site improvement vision is to provide electric vehicle charging for our campus community and for patrons of the Mobility Hub. In order to accomplish this, we need the financial support of Liberty Utilities and the California Public Utilities Commission to provide electric vehicle charging stations and related infrastructure. If approved, these improvements will be constructed in 2019 in coordination with our Mobility Hub project. We highly encourage the approval of the Liberty Utilities' pilot program in order to make this vision a reality.

Sincerely,

Russi Egan

Vice President, Administrative Services

Dear California Public Utilities Commission:

On behalf of the Lake Tahoe Unified School District (LTUSD), I am writing to express strong support for Liberty Utilities' proposed electric vehicle charging pilot program for state parks and beaches, as well as schools throughout its service territory.

The LTUSD is excited about, and strongly committed to a rapid transition to electric buses and vehicles for the myriad benefits they provide – healthier air for students riding our buses to and from school, reduced fuel and maintenance costs, and a reduction of our carbon footprint. This year, LTUSD set a goal of electrifying half of our school bus fleet (of 29 buses) within three years, based upon the recommendation of a school sustainability committee. We have submitted multiple funding applications for electric buses, and will continue to seek sources of funding to realize our goal. We have secured funding for two electric buses to date. In addition, we are looking at opportunities to incorporate electric vehicles in our school vehicle fleet (non-bus), and we'd like to offer electrify vehicle charging to teachers, parents, and students at all six of our schools.

To support our adoption of electric buses and vehicles, we need to install a substantial amount of charging infrastructure, for which we currently have minimal funding. We are therefore very supportive of Liberty Utilities' inclusion in its pilot program of eight wall mounted charging stations for our bus barn in South Lake Tahoe, as well as two Level 2 ports at four elementary schools, as well as our middle school and high school. We would not be in a position to make a shift to electrification nearly as quickly or affordably without this pilot program offering.

We encourage approval of Liberty Utilities' pilot program, which will help the Lake Tahoe Unified School District move quickly to an exciting electric vehicle future for our students, and their environment.  
Sincerely,



Steve Brennan, PE  
Sustainability and Projects Supervisor  
Lake Tahoe Unified School District



Lake Tahoe Unified  
School District  
1021 Al Tahoe Boulevard  
South Lake Tahoe, CA 96150

Phone: (530) 541-2850  
Fax: (530) 541-5930

Email: [info@ltusd.org](mailto:info@ltusd.org)  
Web: [www.ltusd.org](http://www.ltusd.org)

Superintendent  
Dr. James R. Tarwater

Board of Education  
Barbara Bannar, President

Angela Swanson

Troy Matthews

Larry Reilly

Bonnie Turnbull





# Transportation Electrification for Schools and State Parks

A. 18-07-020

December 06, 2018



Together, Building  
a Better California



# EV Charge Schools

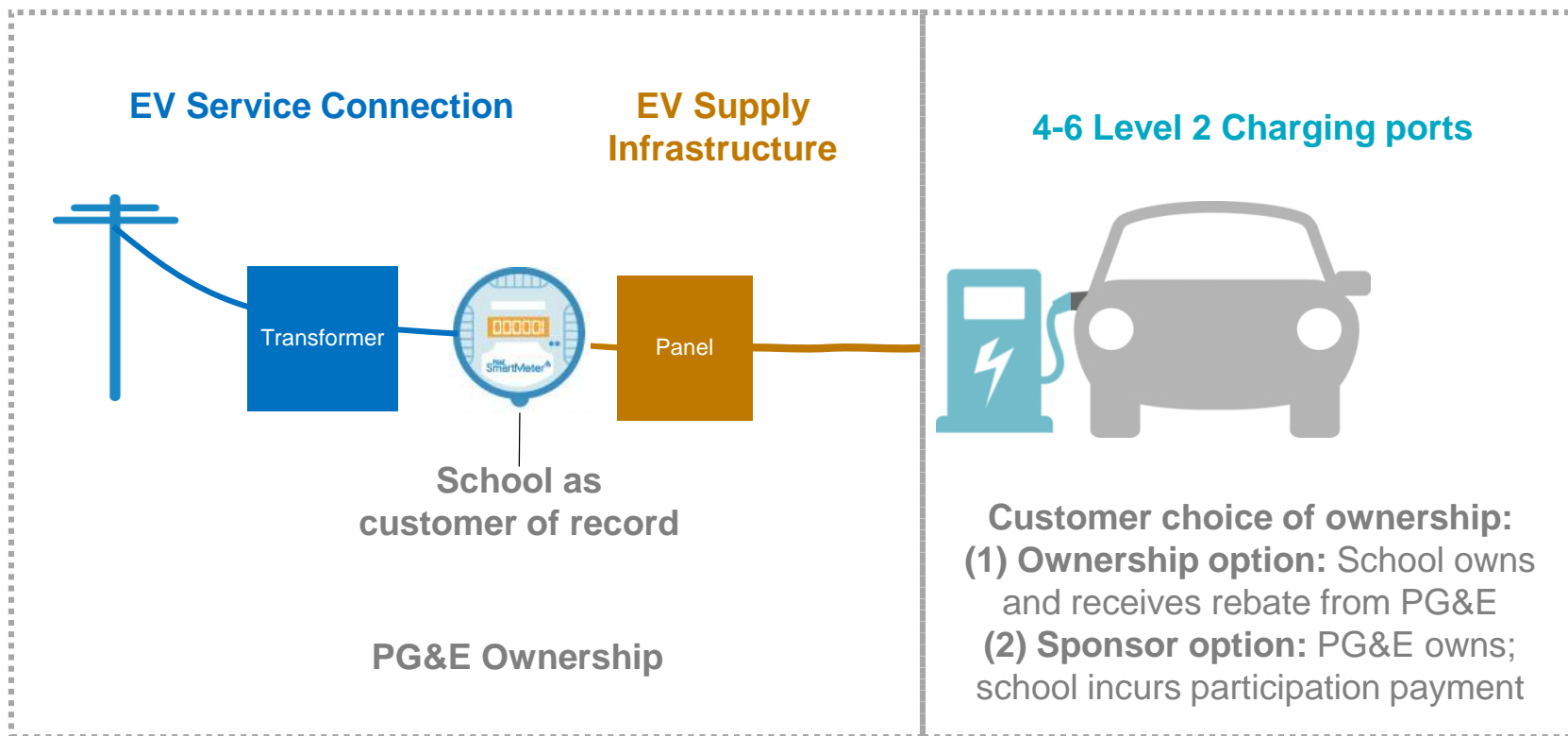


Together, Building  
a Better California

# Proposed pilot overview

- Standard designs for purpose of cost estimation include **four or six Level 2 charging ports** per site
- For use by **personal vehicles**: teachers, staff, parents, teachers, broader community, as determined by the school
- Choice of chargers to be owned by **site host (“ownership option”)** or **PG&E (“sponsor option”)**
  - **Ownership option: Rebate** = base cost of charger
  - **Sponsor option: Participation payment** = cost of chosen charger less base cost of charger
- School as **customer of record**
- Targeting **public lower education schools**
  - Higher education campuses can be up to 10% of schools
- **5-year cost: \$5.76M**

# Demonstrative site layout



# EV Charge Parks



Together, Building  
a Better California



# Proposed pilot overview

**Site design** will vary to the extent possible based on the needs of the Parks and the constraints of specific sites.

## *Visitor charging*

Standard designs for purpose of cost estimation include:

- Four Level 2 charging ports
- One DC Fast Charger and two Level 2 charging ports
- Off-grid charging solutions will be considered for sites with insufficient electric capacity

**PG&E ownership** with no participation payment

**Electricity payments:** PG&E will contract with a third party who will be the customer of record and can collect revenue from drivers who use the charger

## *Fleet charging*

Standard designs for purpose of cost estimation include:

- Four Level 2 charging ports with additional capacity for up to ten total Level 2 charging ports
- Off-grid charging solutions will be considered for sites with insufficient electric capacity

**PG&E ownership** with no participation payment

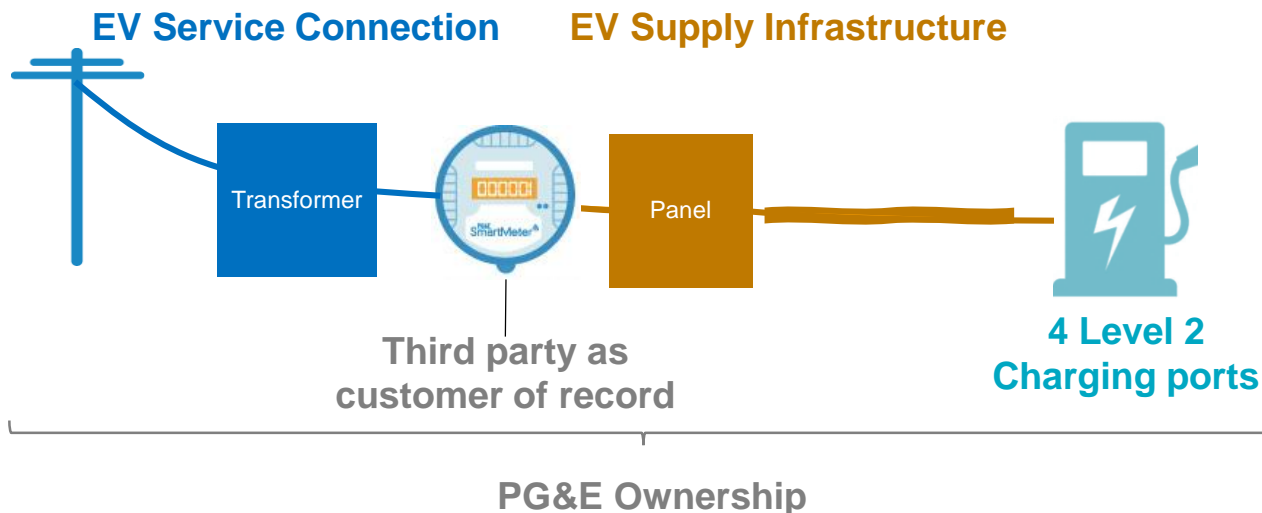
**Electricity payments:** Parks will pay for the electric consumption of the grid-connected chargers used by the Parks fleet and employees

**5-year cost: \$5.54M**

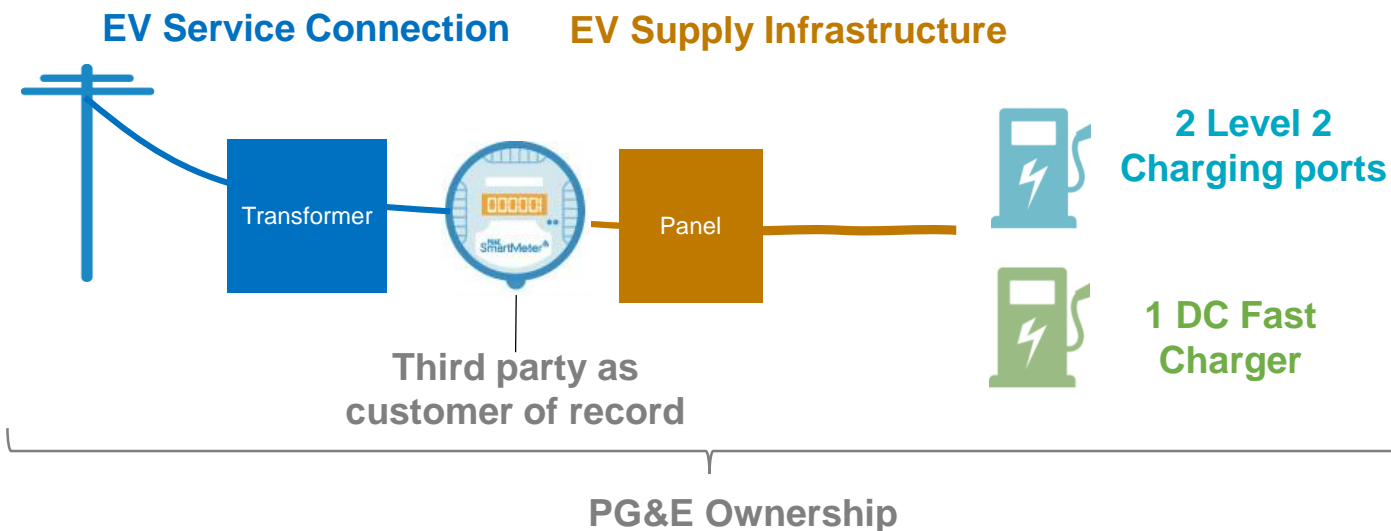
# Demonstrative site layout: visitor charging

No. sites for  
estimation  
purposes

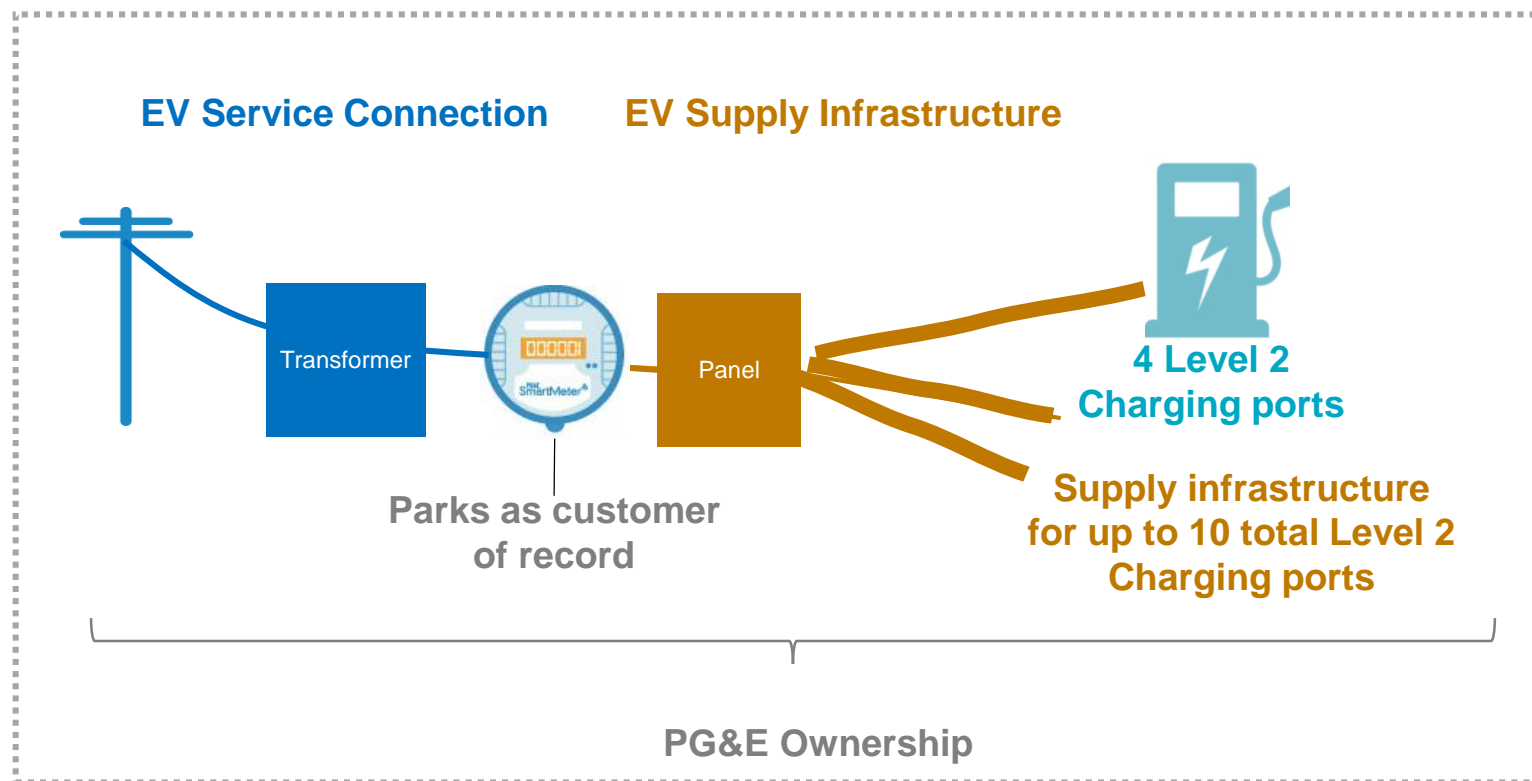
3 sites



2 sites



# Demonstrative site layout: fleet charging





# Summary impacts



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# Total proposed costs

Nominal \$, Thousands						
	2019	2020	2021	2022	2023	Total
<b>EV CHARGE SCHOOLS</b>						
<i>Capital</i>	1,123	2,311	1,200	15	16	4,664
<i>Expense</i>	410	355	200	67	68	1,100
<b>EV CHARGE PARKS</b>						
<i>Capital</i>	1,051	2,067	1,073	8	8	4,207
<i>Expense</i>	236	746	146	100	102	1,330
<b>Total</b>	<b>2,819</b>	<b>5,478</b>	<b>2,619</b>	<b>191</b>	<b>194</b>	<b>11,301</b>

# Revenue requirement and rate impact

## EV Charge Schools and EV Charge Parks Forecast Revenue Requirement, 2019-2023

Nominal \$, Thousands						
	2019	2020	2021	2022	2023	Total
EV Charge Schools	519	782	947	904	867	4,018
EV Charge Parks	312	1,047	663	686	669	3,378
<b>Total</b>	<b>831</b>	<b>1,829</b>	<b>1,610</b>	<b>1,590</b>	<b>1,537</b>	<b>7,396</b>

### Rate impact:

- Based on rates currently in effect, the bill for a typical residential bundled non-California Alternate Rates for Energy (CARE) customer using 500 kilowatt-hours per month would increase \$111.59 to \$111.61, or 0.02 percent.

# Thank you



Together, Building  
a Better California

# Back-up

# Pilot objectives

- ❑ Facilitate deployment of EV charging infrastructure to enable drivers to charge EVs on campuses where they work or learn;
- ❑ Increase availability of chargers in communities where EV adoption and EV charger availability are low relative to other parts of PG&E's territory;
- ❑ Spur EV adoption more broadly by increasing awareness of EVs; and
- ❑ Pilot educational programs to increase EV education, particularly among young future drivers.

# Site acquisition and selection

## **Customer outreach channels:**

- Direct outreach through existing relationships
- E-mail
- EV Charge Schools webpage
- Marketing collateral

## **Potential eligibility criteria:**

- Available parking spaces
- Capacity on nearby transformer
- Distance between transformer and new service point
- Site conditions related to construction feasibility (i.e., trenching surface, EVSE mounting surface, etc.)



# Ongoing education

- **Community events** to raise awareness of charging availability
- **On-site signage** to educate community members about chargers
- **EV curricula** to encourage greater awareness of clean transportation, with emphasis on EVs



# Performance accountability metrics

Annual report to the Commission and the Program Advisory Committee, which will include the following metrics where feasible:

Category	Metric
Deployment	Site host enrollment School description EVSEs installed (including power rating, make and model) Deployment time Installation cost Deployment within or adjacent to DACs Supplier diversity and workforce targets
Operational	Utilization rate by site, by type of charger Applicable TOU rate kW profile kWh usage by price Load management approaches, where applicable Other usage data: plugged in time, charging duration, charging power level Charging load profiles Customer experience and satisfaction
Descriptive	Key barriers to deployment of EV charging infrastructure at schools and the pilot's approaches to overcome these barriers Outreach efforts Educational efforts Insights on effect of the program on EV awareness and perceptions in participating schools

# Pilot objectives

- ❑ Support the mission of the California Department of Parks and Recreation:  
“To provide for the health, inspiration and education of the people of California by helping to preserve the state’s extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation”;
- ❑ Facilitate deployment of EV charging infrastructure that enables state park visitors to charge while they spend time at the park;
- ❑ Enable electrification of the State Parks’ fleet with a focus on light-duty vehicles; and
- ❑ Encourage EV adoption more broadly by installing EV charging infrastructure in remote areas where minimal charging infrastructure exists today and publicizing the availability of charging in remote locations.

# Site selection

**PG&E intends to implement the following process for site selection:**

- 1 Electric infrastructure pre-screen
- 2 Environmental constraints pre-screen
- 3 Assessment of additional criteria:
  - Visitorship
  - Proximity to DACs
  - Availability of existing or planned DCFC
- 4 Recommendations to State Parks
- 5 Detailed constraints analysis of priority sites

# Ongoing education

- On-site signage at all sites with visitor charging to provide information about the chargers: how they work, how they provide environmental benefits, and how they tie to the mission of the State Parks
- Events at sites with visitor charging to inform visitors about the availability of the charging station and provide education about EV charging and EV ownership generally
- Broader media campaign with the objective of changing drivers' perceptions of the availability of EV charging and the realities of how many places they can travel to in an EV

# Performance accountability metrics

Annual report to the Commission and the Program Advisory Committee, which will include the following metrics where feasible:

Category	Metric
Deployment	Number of sites installed Site description EVSEs installed (including power rating, make and model) Deployment time Installation cost Deployment within or adjacent to DACs Supplier diversity and workforce objective achievement
Operational	Utilization rate by site, by type of charger Applicable rate kW profile kilowatt-hour (kWh) usage by price Other usage data: plugged in time, charging duration, charging power level Charging load profiles (aggregate and by charger) Customer experience and satisfaction
Descriptive	Key barriers to deployment of EV charging infrastructure at state parks and the pilot's approaches to overcome these barriers Report-outs from educational events Insights on the effect of the pilot on EV awareness and perceptions around EVs



# Committed to progress

*Leading the way in clean transportation*



## Schools and Parks Pilots

Randy Schimka  
December 6, 2018

# Program Summary

SDG&E proposes to serve three market segments pursuant to AB 1082/1083 and SB 350:

## Schools



- 30 K-12 & higher ed. sites
- 184 L2 ports, 12 DCFCs
- 25% DAC goal
- 12 year load impact:  
4,936 MWh

## State Parks & Beaches



- 12 sites
  - 64 L2 ports, 10 DCFCs
- Cumulative DAC goal: 50%
- 12 year load impact:  
3,358 MWh

## City & County Parks



- 10 sites
  - 56 L2 ports, 10 DCFCs
- Cumulative DAC goal: 50%
- 12 year load impact:  
3,144 MWh

Diverse Business Enterprise goal: 40%

All installations by IBEW-affiliated contractors and  
EV Infrastructure Training Program-certified electricians, paid prevailing wage

# Program Design

## End-to-end ownership

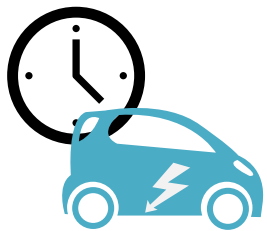


- Reduces risk for site hosts and encourages participation
- Pre-installation EV survey and end-to-end utility ownership helps ensure that chargers are well-maintained and utilized, freeing site hosts from ownership and maintenance costs



## Versatile site design

- Variety of site configurations allows for site host flexibility including L2 and DC Fast Charging



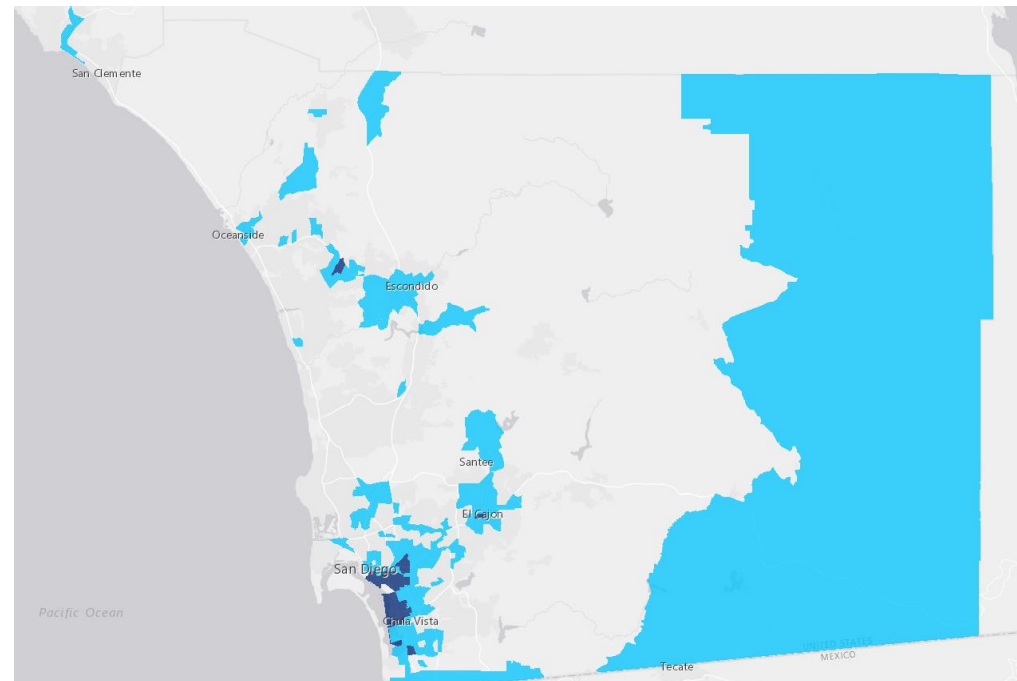
## Managed charging



- Drivers will be charged on existing SDG&E time-of-use EV rate, allowing them to save money with off-peak charging

# City & County Parks

- Including City & County Parks allows SDG&E to reach more DAC sites
- Only **one of 12** State Parks and Beach sites within SDG&E's service territory is in a Disadvantaged Community (SDG&E service territory definition)\*
- All City & County Parks sites will be located in DACs

## DACs in SDG&E Service Territory



-  Top 25% DACs statewide
-  Top 25% DACs SDG&E service territory

\*SDG&E defines DACs as the top quartile of census tracts as identified by the CalEnviroScreen tool on a utility-wide basis, as directed in D.16-10-045.

# Program Cost and Rate Impact

## Proposed Total Program Direct Costs

(000's)	Schools	State Parks & Beaches	City & County Parks	Total
Capital Expenditures	\$9,376	\$4,535	\$3,553	\$17,464
O&M	\$516	\$495	\$246	\$1,257
Total	\$9,892	\$5,030	\$3,799	\$18,721

*Excludes escalation & loaders, includes sales tax.*

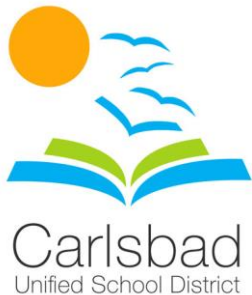
## Illustrative System Total Electric Rate Impact

Current Rate (1/1/18) (¢/kWh)	Year	Proposed Rate (¢/kWh)	Change from Current (¢/kWh)	Change from Current (%)
23.997	2021	24.010	0.013	0.05%
	2022	24.018	0.021	0.09%
	2023	24.018	0.021	0.09%



# Community Support

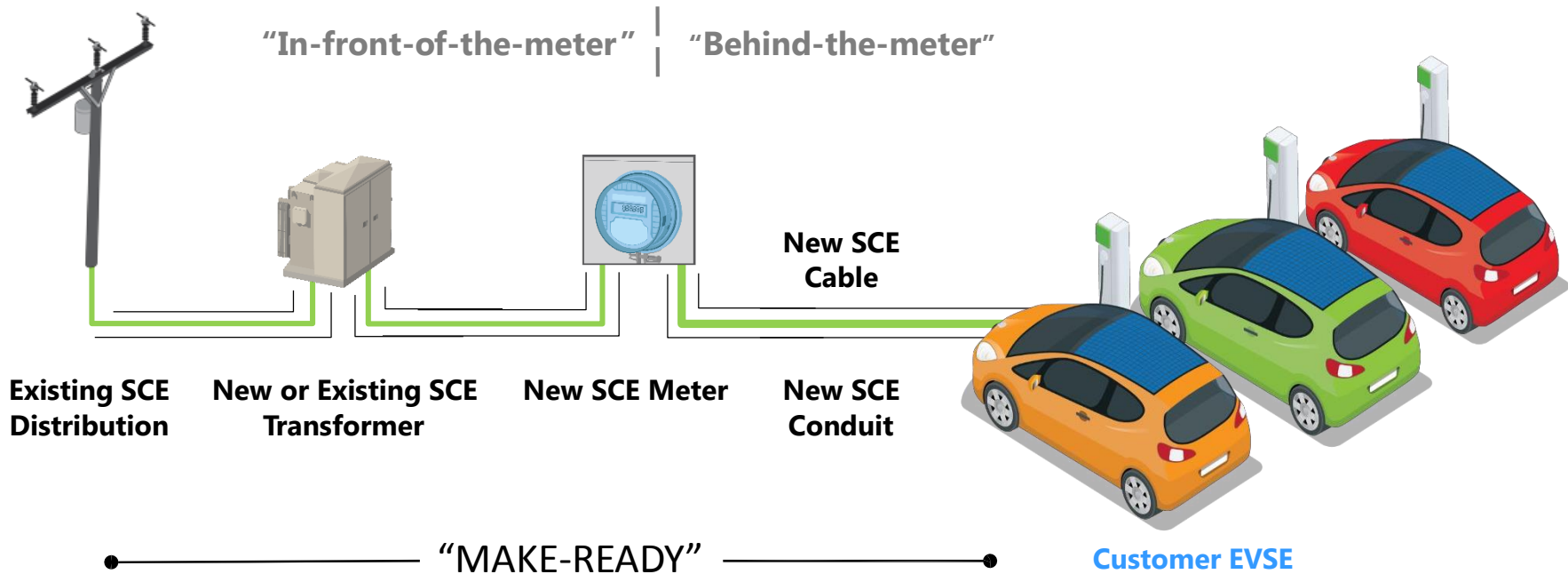
## Support letters provided by



# **SCE's AB 1082, AB 1083 Proposals: Charging Infrastructure for Schools, State Parks, and Beaches**

December 6, 2018  
CPUC Public Workshop

# Commercial Electric Vehicle Supply Equipment (EVSE) Infrastructure



# SCE Pilot Designs

## AB1082 – Educational Facilities

## AB1083 – State Parks and Beaches

<b>Duration</b>	<b>2 years (each)</b>	
<b>Cost</b>	<b>\$~10M (each)</b>	
<b>Scope</b>	40 K-12 sites with EV curriculum support (up to 250 ports)	Up to 27 State Park/Beach sites (120 L2 ports, 10 DCFC), 15 portable charging devices
<b>Education and Marketing</b>	<ul style="list-style-type: none"> <li>EV-specific information to enhance curriculum (e.g., downloadable content)</li> <li>EV education lab</li> </ul>	Broad marketing campaign to support park charging awareness and overcome range anxiety (e.g., "Charge and recharge here") <ul style="list-style-type: none"> <li>Physical and online media</li> </ul>
<b>Equipment</b>	Level 1 and Level 2 EVSE	Level 2 EVSE, DC Fast Chargers, solar-powered chargers not grid connected
<b>Vehicle Type Served</b>	Light-duty faculty, staff, student and visitor (buses excluded – eligible in MD/HD program)	Park fleet, employee, visitor
<b>EVSE Ownership Model</b>	Customer make-ready with SCE own and operate option	SCE ownership w/ 3 <sup>rd</sup> -party operational contract (customer of record)
<b>Cost to site host</b>	EVSE purchase/participation payment Electricity for fleet and public (where applicable) Maintenance and operating fees (where applicable)	Electricity for fleets

# Marketing, Education & Outreach – AB 1082

1082 Education Campaign	What	Why
<b>Grade level specific information</b>	Targeted grade-level appropriate messaging (physical, digital and experiential), including: <ul style="list-style-type: none"> <li>• curriculum enhancement material</li> <li>• teacher trainings</li> <li>• mobile EV education classroom</li> </ul>	Increase awareness of EVs, their societal benefits, the benefits of fueling from the grid, the economics of EV ownership
<b>Faculty Education Program</b>	<ul style="list-style-type: none"> <li>• Development of educational and training materials in collaboration with original equipment manufacturers, local dealerships, and other stakeholders to help administrators, faculty and staff identify and select an EV that matches their needs</li> <li>• Hands-on ride-and-drive and other experiential events</li> </ul>	Leverage visibility of newly installed infrastructure and teacher community status to serve as “EV ambassadors” to influence adoption outside of schools
<b>EV Economic Education</b>	Enhance resources and support for lower-income buyers (e.g., SCE online total-cost-of-ownership tools, education and awareness of financial incentives and rebates (federal, state, local, utility), credit union financing, benefits of leasing, promote alternatives to new EV purchases, including previously-owned EVs and leases)	Address the misconceptions regarding the affordability of EVs



# Marketing, Education & Outreach – AB 1083

1083 Marketing Campaign	What	Why
<b>Marketing Campaign</b>	<p>Media campaign publicizing the availability of EV charging at select State Parks</p> <ul style="list-style-type: none"><li>• SCE will utilize an external marketing firm to develop creative material and deploy a marketing campaign at targeted consumer markets</li></ul>	<ul style="list-style-type: none"><li>• Raise awareness among potential Park visitors about available EV charging at the Parks, encouraging them to drive electric vehicles on their future trips to the Parks</li><li>• Increase awareness more broadly about the availability of EV charging in many locations across the state, even those that may seem remote, in order to reduce range anxiety and facilitate EV adoption</li></ul>

# Pilot Cost Breakdown

## **AB 1082**

<b>Capital Cost</b>	<b><u>TOTAL (\$M)</u></b>
Utility-side Costs (make-ready)	<b>\$1.5</b>
Customer-Site Cost (make-ready)	<b>\$4.7</b>
Ownership Station Cost (incremental)	<b>\$1.0</b>
Portable Units (owned)	<b>N/A</b>
Non-labor (Capital)	<b>\$0.0</b>
Labor (Capital)	<b>\$0.2</b>
<b>TOTAL</b>	<b>\$7.4</b>

<b>Program O&amp;M</b>	<b>-</b>
Non-labor (Expense)	<b>\$0.0</b>
Labor (Expense)	<b>\$0.8</b>
Ownership and Operation O&M	<b>\$0.4</b>
<b>TOTAL</b>	<b>\$1.2</b>

<b>INFRASTRUCTURE TOTAL</b>	<b>\$8.7</b>
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Market Education & Outreach	<b>\$1.2</b>
<b>ME&amp;O TOTAL</b>	<b>\$1.2</b>

<b>GRAND TOTAL</b>	<b>\$9.9</b>
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## **AB 1083**

<b>Capital Cost</b>	<b><u>TOTAL (\$M)</u></b>
Utility-side Costs (make-ready)	<b>\$1.9</b>
Customer-Site Cost (make-ready)	<b>\$2.9</b>
Ownership Station Cost (incremental)	<b>\$1.0</b>
Portable Units (owned)	<b>\$1.0</b>
Non-labor (Capital)	<b>\$0.0</b>
Labor (Capital)	<b>\$0.2</b>
<b>TOTAL</b>	<b>\$6.9</b>

<b>Program O&amp;M</b>	<b>-</b>
Non-labor (Expense)	<b>\$0.0</b>
Labor (Expense)	<b>\$0.8</b>
Ownership and Operation O&M	<b>\$0.2</b>
<b>TOTAL</b>	<b>\$1.0</b>

<b>INFRASTRUCTURE TOTAL</b>	<b>\$7.9</b>
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Market Education & Outreach	<b>\$2.0</b>
<b>ME&amp;O TOTAL</b>	<b>\$2.0</b>

<b>GRAND TOTAL</b>	<b>\$9.9</b>
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# Thank You!



Pictured: Portable Charging Solution Example



# Infrastructure Questions

1. Are the proposed EVSE ownership models reasonable?
  1. Is utility ownership of all EVSE a valid interpretation of AB 1083?
  2. Do the proposals minimize risk of stranded assets?
  3. How was the EVSE rebate value calculated?
  4. Do the program designs ensure rebates will not cover more than the site hosts' costs for EVSE?
2. Is the scale appropriate?
  1. How many EVs will the pilots support?
  2. Is it appropriate to include DCFC in the programs?
3. What are the pilots expected load impacts?
  1. What charging load management requirements are put on the site-hosts?
  2. How did the pilots incorporate recommendations made in the ED VGI Staff Report?



# Lunch Break





## **Rate Questions**

1. What rates are available to the site hosts?
2. How will the rates be communicated to the drivers?
3. Will the rates provide electricity as a fuel that is comparable or lower than the cost of conventional fuels?



# Marketing, Education, & Outreach Questions

1. Are the proposed ME&O costs reasonable?
  1. How will the utility coordinate with 3<sup>rd</sup> parties to implement the ME&O?
2. How do the proposed ME&O campaigns build off previous ME&O efforts?
3. Will the ME&O be scalable?
  1. Can the ME&O campaign be adapted to future pilots that target various sectors?
4. How does the ME&O campaign reach DAC's?



# Further Questions

1. Will the pilots result in measurable incremental EV adoption?
2. How do the pilots allow collaboration with CCAs?
3. What are the minimum performance accountability measures?
4. How will data be collected, managed, and reported?
5. How will data accuracy be guaranteed?
6. How will the lessons learned in the pilot be used to further TE efforts?



# Next Steps



# Timeline for AB 1082/1083 Proposals in Scoping Memo

Item	Date
Deadline for Discovery of Issues	December 14, 2018
Common Comment Outline Circulated	December 17, 2018
Concurrent Opening Comments (to be determined)	
Concurrent Reply Comments (to be determined)	
Proposed Decision	First Quarter 2019
Comments on Proposed Decision	First Quarter 2019
Commission Adoption of Decision	Second Quarter 2019





# Questions?

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